

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An ozone gas sensing element characterized by comprising:

a porous material and a sensing agent formed in pores of said porous material; and

a light-transmitting gas selective permeable film which covers a surface of said porous material,
wherein said sensing agent contains a dye which changes absorption in a visible region by
reacting with ozone, [[and]]

said gas selective permeable film comprises an organic polymer which uses, as a monomer, a
compound made of a chainlike molecule containing a vinyl group, and

said gas selective permeable film has a selective permeability that allows permeation of ozone
gas while suppressing penetration of nitrogen dioxide gas.
2. (Original) An ozone gas sensing element according to claim 1, characterized in that said porous material is transparent.
3. (Original) An ozone gas sensing element according to claim 2, characterized in that said porous material is made of glass.
4. (Original) An ozone gas sensing element according to claim 3, characterized in that an average pore size of said porous material allows penetration of said sensing agent, and is less than 20 nm.
5. (Original) An ozone gas sensing element according to claim 1, characterized in that said porous material is a sheet-like material made of fibers.
6. (Original) An ozone gas sensing element according to claim 5, characterized in that

said ozone gas sensing element contains a humectant carried by said porous material, and comprises an ozone sensing sheet formed by dipping said porous material into an aqueous solution in which said dye and said humectant are dissolved, thereby impregnating said porous material with said aqueous solution, and drying said porous material.

7. (Currently Amended) An ozone gas sensing element according to claim 6, characterized in that said ozone sensing sheet is formed by dipping said porous material into an aqueous solution in which said dye and said humectant whose wt % is 10% to 50% are dissolved, in which wt% of the humectant in the aqueous solution is from 10wt% to 50wt%, thereby impregnating said porous material with said aqueous solution, and drying said porous material.

8. (Original) An ozone gas sensing element according to claim 6, characterized in that said humectant comprises at least one of glycerin, ethylene glycol, propylene glycol, and trimethylene glycol.

9. (Original) An ozone gas sensing element according to claim 8, characterized in that said humectant comprises glycerin, and the wt % of said humectant is 30% in said aqueous solution.

10. (Original) An ozone gas sensing element according to claim 6, characterized in that said solution is made acidic.

11. (Original) An ozone gas sensing element according to claim 10, characterized in that said solution is made acidic by at least one acid selected from the group consisting of acetic acid, citric acid, and tartaric acid.

12. (Original) An ozone gas sensing element according to claim 10, characterized in that said solution is made acidic by a pH buffering agent made of an acid and a salt thereof.

13. (Original) An ozone gas sensing element according to claim 1, characterized in that said monomer comprises at least one of acrylic acid, acrylonitrile, methacrylic acid, methyl methacrylate, vinyl chloride, and vinylidene chloride.

14. (Original) An ozone gas sensing element according to claim 1, characterized in that said organic polymer comprises a copolymer.

15. (Original) An ozone gas sensing element according to claim 1, characterized in that said organic polymer comprises polymethylmethacrylate.

16. (Original) An ozone gas sensing element according to claim 15, characterized in that a molecular weight of said organic polymer is not less than 100,000.

17. (Original) An ozone gas sensing element according to claim 1, characterized in that said dye contains an indigo ring.

18. (Currently Amended) An ozone gas sensing element characterized by comprising an ozone sensing sheet formed by carrying a dye containing an indigo ring and a humectant by a sheet-like carrier made of fibers, wherein said humectant is operable to accelerate a reaction between the dye and ozone.

19. (Original) An ozone gas sensing element according to claim 18, characterized in that said carrier comprises a sheet-like carrier made of cellulose.

20. (Original) An ozone gas sensing element according to claim 18, characterized in that said ozone sensing sheet is formed by dipping said carrier into an aqueous solution in which said dye and said humectant are dissolved, thereby impregnating said carrier with said aqueous solution, and drying said carrier.

21. (Currently Amended) An ozone gas sensing element according to claim 20, characterized in that said ozone sensing sheet is formed by dipping said carrier into an aqueous solution in which

said dye and said humectant whose wt % is 10% to 50% are dissolved, wherein wt% of the humectant in the aqueous solution is from 10wt% to 50wt%, thereby impregnating said carrier with said aqueous solution, and drying said carrier.

22. (Original) An ozone gas sensing element according to claim 20, characterized in that said humectant comprises at least one of glycerin, ethylene glycol, propylene glycol, and trimethylene glycol.

23. (Original) An ozone gas sensing element according to claim 22, characterized in that said humectant comprises glycerin, and the wt % of said humectant is 30% in said aqueous solution.

24. (Original) An ozone gas sensing element according to claim 20, characterized in that said dye comprises indigo carmine.

25. (Original) An ozone gas sensing element according to claim 20, characterized in that said solution is made acidic.

26. (Original) An ozone gas sensing element according to claim 25, characterized in that said solution is made acidic by at least one acid selected from the group consisting of acetic acid, citric acid, and tartaric acid.

27. (Original) An ozone gas sensing element according to claim 25, characterized in that said solution is made acidic by a pH buffering agent made of an acid and a salt thereof.

28. (Original) An ozone gas sensing element according to claim 20, characterized in that said ozone sensing sheet comprises a plurality of ozone sensing sheets, and said ozone sensing sheets are formed by dipping said carriers into aqueous solutions in which said humectants different in wt % are dissolved, thereby impregnating said carriers with said aqueous solutions, and drying said carriers.

29. (Original) An ozone gas sensing element according to claim 20, characterized by further comprising a gas amount limiting layer formed on a surface of said ozone sensing sheet, and including a plurality of through holes.

30. (Original) An ozone gas sensing element according to claim 20, characterized by further comprising a gas amount limiting cover formed to cover said ozone sensing sheet, and including an opening in a portion thereof.

31. (Original) An ozone gas sensing element according to claim 30, characterized by further comprising a gas permeable film covering the opening.

32. (Original) An ozone gas sensing element according to claim 20, characterized by further comprising a light-transmitting gas selective permeable film which covers a surface of said ozone sensing sheet,
wherein said gas selective permeable film comprises an organic polymer which uses, as a monomer, a compound made of a chainlike molecule containing a vinyl group.

33. (Original) An ozone gas sensing element according to claim 32, characterized in that said monomer comprises at least one of acrylic acid, acrylonitrile, methacrylic acid, methyl methacrylate, vinyl chloride, and vinylidene chloride.

34. (Original) An ozone gas sensing element according to claim 32, characterized in that said organic polymer comprises a copolymer.

35. (Original) An ozone gas sensing element according to claim 32, characterized in that said organic polymer comprises polymethylmethacrylate.

36. (Original) An ozone gas sensing element according to claim 35, characterized in that a molecular weight of said organic polymer is not less than 100,000.